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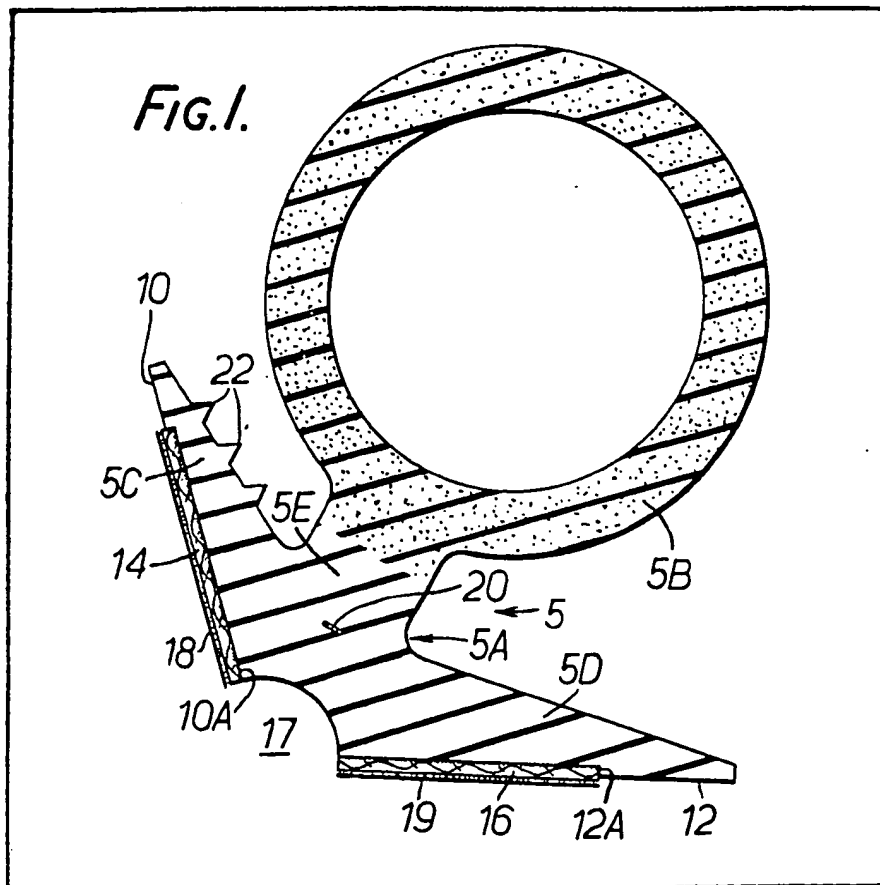
(54) Improvements in and Relating to Sealing Strips

(57) A sealing strip is disclosed, for use, for example, for draught-excluding and weather-proofing purposes on a motor vehicle body. The strip has a base portion (5A) eg of rubber, which has two recesses (10A, 12A) running the length of the strip. A respective length of adhesive (14, 16) is placed in each of these recesses and covered with a respective covering tape (18, 19). The strip also includes a circular seal portion (5B) made of

softer rubber. To secure the sealing strip in position, the coverings (14, 16) are peeled off and the strip then placed into position on the vehicle body. The adhesive may alternatively be of the type which is normally inoperative but can be rendered operative subsequently by applying a solvent to it. In such a case, the coverings (14, 16) are not necessary.

In another embodiment the recesses are omitted and in a further embodiment the adhesive is replaced by magnetic tape.

An inextensible material 20, eg glass fibre is embedded in the strip.



The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

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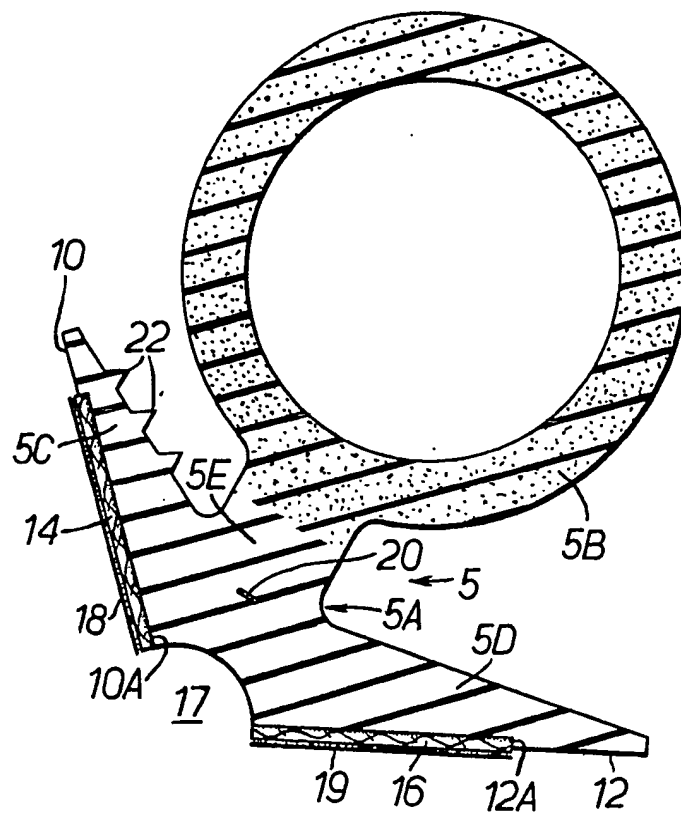


FIG. 1.

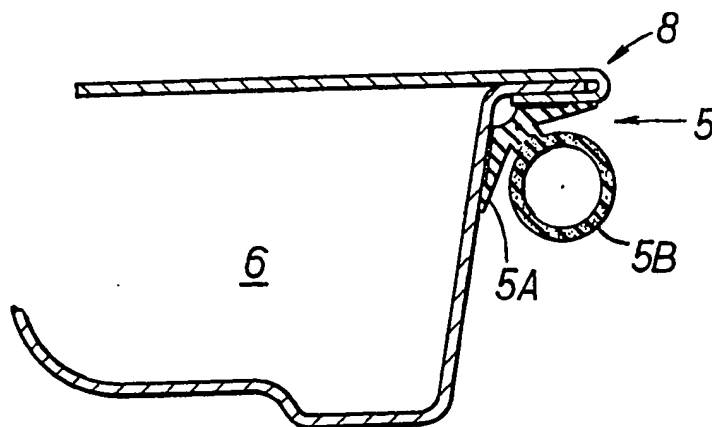


FIG. 2.

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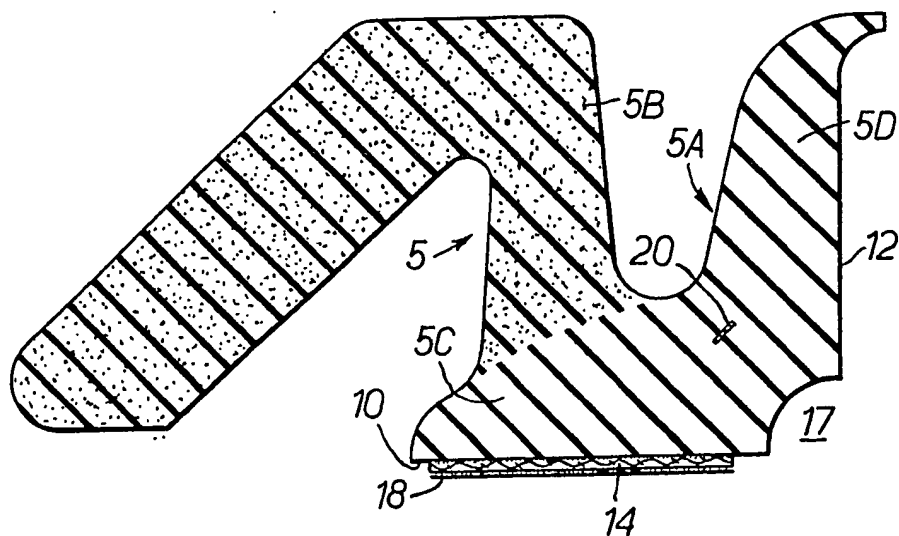


FIG. 3.

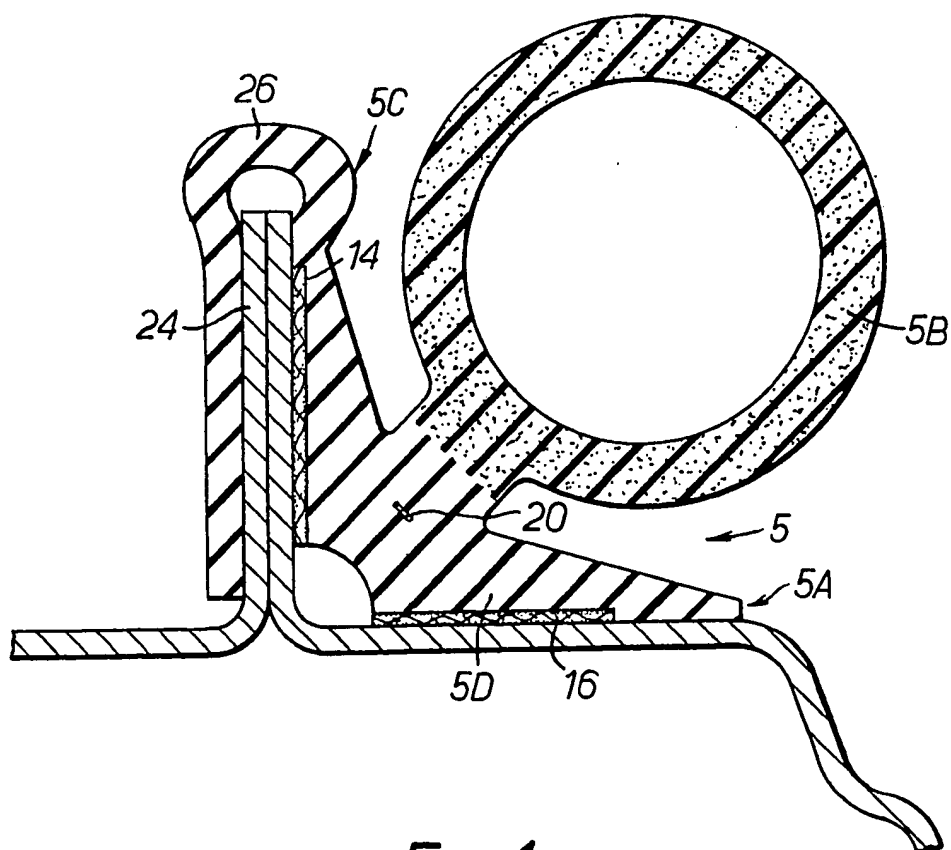


FIG. 4.

SPECIFICATION

Improvements in and Relating to Sealing Strips

The invention relates to sealing strips such as, for example, sealing strips for draught-excluding and weather-proofing purposes, for use, for example, on vehicle (e.g. motor vehicle) bodies.

Various novel features of the invention will be apparent from the following description, given by way of example only of sealing strips embodying the invention, reference being made to the accompanying diagrammatic drawings in which:

Figure 1 is an enlarged cross-section through one such sealing strip, shown about to be fitted onto a motor vehicle door;

Figure 2 is a cross-section showing the sealing strip of Figure 1 fitted onto the vehicle door;

Figure 3 shows a cross-section corresponding to that of Figure 1 but through a modified one of the sealing strips; and

Figure 4 is a cross-section through a further one of the sealing strips, shown fitted onto a flange surrounding a motor vehicle door opening.

To be described in more detail below is a sealing strip made of flexible material, such as rubber, having a base which carries a layer of adhesive whose external surface is adhesively inoperative but which may be rendered operative and by means of which the strip may be adhesively secured in position.

The strip is preferably provided with a predetermined profile to suit a predetermined sealing requirement. For example, it may be provided with a sealing portion, possibly tubular, supported on the said base.

The layer of adhesive may be rendered inoperative by being covered with a removable protective covering. For example, the adhesive may be pressure sensitive adhesive or mastic applied by hot melt, or may be cold mastic. In another example, the adhesive is double-sided adhesive tape.

Instead the adhesive may be solvent-activated adhesive.

Advantageously, the adhesive layer is mounted on the said base surface in a recess therein.

There may be a second base surface, possibly spaced from and not co-planar with the first-mentioned base surface, and the second base surface may carry another layer of adhesive whose external surface is adhesively inoperative but which may be rendered operative and by means of which the second base surface may be adhesively secured in position. That layer of adhesive may be mounted within a recess of the second base surface.

In a more specific sense, there will be disclosed a sealing strip made of a length of flexible material such as rubber having a base surface carrying a layer of adhesive by means of which the sealing strip may be mounted and held in operative position, and a substantially inextensible member running longitudinally along and embedded within the material of the sealing strip for substantially preventing stretching of the

sealing strip.

Preferably, the external surface of the layer of adhesive is adhesively inoperative but which may be rendered operative and by means of which the strip may be secured in position.

The sealing strip may define a distal edge which is curved back on itself so as to embrace the distal edge of a mounting flange or the like to which the sealing strip may be operatively attached. The curved-back distal edge of the sealing strip may be extended so as to define, in combination with the said base surface of the sealing strip, a channel for embracing both sides of, as well as the distal edge of, the said flange.

In a modification, the layers of adhesive referred to in the foregoing paragraphs may be replaced by lengths of magnetic or magnetisable tape for securing the strips in position.

The foregoing are exemplary and not exhaustive of the various features of the sealing strip now to be more specifically described.

The strip 5 shown in Figures 1 and 2 is to be fitted around the door 6 (Fig. 2) of a motor vehicle body. The door 6 is shaped to have a flange 8 running around its edge, and, when the door is fitted to the vehicle body and closed onto the opening, this flange approaches a flange on the vehicle body and surrounding the opening.

The sealing strip 5 comprises a duplex rubber extrusion having a base portion 5A (Fig. 1) of solid extruded rubber and a circular seal portion 5B made of softer rubber, for example, foam rubber. The base portion 5A is in the form of two generally wedge or triangular-shaped wing parts 5C and 5D extending in opposite directions away from a central part 5E. The wing parts 5C and 5D have base surfaces 10 and 12. Each of these surfaces has a recess, 10A, 12A, running the length of the strip. A respective length of adhesive 14, 16 is placed into each of the recesses 10A and 12A.

The central part 5E of the base portion 5A is provided with an arcuately-shaped recess 17.

As shown in Figure 1, the external surfaces of the layers of adhesive 14 and 16 are covered with protective coverings 18 and 19. In order to secure the sealing strip in position, it is merely necessary to peel off the protective coverings and then press the strip into the angle between the door surround 6 and the flange 8 so that it becomes firmly secured to the door by the adhesive layers 14, 16. No other fixing arrangement is necessary.

For clarity, the details of the strip and the adhesive layers are not shown in Fig. 2.

The layers of adhesive 14, 16 may take any suitable form such that the strip carries its own adhesive and no adhesive application is necessary at the point of assembly. For example, the layers of adhesive may be pressure-sensitive adhesive or mastic applied to the base during manufacture by a hot melt operation, their external surfaces then being made adhesively inoperative by covering them with the removable protective coverings 18, 19.

Another possibility is to use double-sided

adhesive tape, one side of which is used to secure the tape in the corresponding recess and the other side of which is made adhesively inoperative by covering it with the removable

5 protective covering.

In another example, the layers of adhesive 14, 16 are layers of cold mastic, or layers of solvent-applied pressure-sensitive adhesive, in each case made adhesively inoperative by the removable

10 protective coverings 18, 19.

In a further example, the layers of adhesive 14, 16 are layers whose external surfaces are not covered with protective coverings but which are inherently adhesively inoperative until rendered

15 operative by being activated (at the point of assembly) by application to them of a predetermined substance or solvent.

An elongate substantially inextensible member 20 may be embedded in the strip, for example approximately centrally of the central part 5E of the base portion 5A. The member 20 runs along the complete length of the strip, preferably, the member 20 may be made of any suitable material, such as synthetic material. For example,

20 it could comprise glass fibre strands. Such strands could, for example, be adhesively secured to polyester material so as to produce a tape, about 5 mm wide for example.

In another example, the member 20 could comprise polyester threads (five in number, for example) woven together to form a lattice-like tape about 3 mm wide, for example.

The member 20 can be embedded in the material of the strip by feeding it into the extruder

35 through suitable guides so as appropriately to position it.

The member 20 prevents or minimises stretching of the strip 5, either before or while it is being fitted onto the door. For example, when peeling off the protective coverings 18 and 19 from the adhesive layers 14 and 15, there may be a tendency to apply a tension force to the strip and then to press it into contact with the door surround 6 and the flange 8 while it is under tension. If the member 20 is not provided, then the strip could be stuck to the door while stretched, and its resultant inherent tendency to resile could unstick it from the door. Such stretching is resisted by the member 20.

50 The base portion 5A is provided with longitudinal ridges 22 on the outer surface of its wing part 5C.

In a modification, the width of the wing part 5C, which is to be secured in the door flange 8, could be increased so that the material of that portion extends beyond, and possibly curls around, the edge of the flange 8. In this way, the edge of the flange would be protected against impacts when the door is opened in a confined space.

60 The shape of the strip may be modified as desired, and Figure 3 shows a modified form in which parts corresponding to Figure 1 are similarly referenced. The strip shown in Figure 3 has a layer of adhesive 14 along the base surface

of only one of the two wing parts 5C and 5D of the base portion 5A but it could, instead, have such layers on the base surfaces of both such wing parts. Figure 3 shows how the strip may have the optional substantially inextensible member 20. The layers of adhesive 14 may take any of the forms suggested above for the layers 14, 16 in Fig. 1.

70 The strip shown in Figure 4 is for fitting not to the vehicle door but to a flange 24 surrounding the door opening. The strip shown in Figure 4 is generally similar in shape to the strip shown in Figure 1 (and parts corresponding to those in Figure 1 are correspondingly referenced), but one wing part 5C is considerably extended in width so as to provide a right-angled extension 26 which forms, with the wing part 5C, a channel-shaped section which embraces the flange 24 of the body.

85 As before, the sealing strip is secured in position by layers of adhesive 14, 16, which are shown covered with protective coverings until just before fitting. Also shown in Figure 4 is the optional substantially inextensible member 20. As before, the layers 14, 16 of adhesive may take any of the forms suggested above for the layers 14, 16 in Fig. 1.

In a modification, applicable to all the embodiments illustrated, the layers of adhesive 14, 16, may be replaced by lengths of magnetic or magnetised tape for securing the strip in position magnetically.

Claims

1. A sealing strip made of flexible material and comprising a base which carries a layer of adhesive whose external surface is adhesively inoperative but which may be rendered operative and by means of which the strip may be adhesively secured in position, and a sealing portion attached to and extending along the length of the base and having a profile which is bendable towards and away from the base.

2. A strip according to claim 1, in which the sealing portion is longitudinally tubular.

110 3. A strip according to claim 1 or 2, in which the adhesive layer is mounted on the said base surface in a recess therein.

4. A strip according to any preceding claim, including a second base surface which carries another layer of adhesive whose external surface is adhesively inoperative but which may be rendered operative and by means of which the second base surface may be adhesively secured in position.

120 5. A strip according to claim 4, in which the said other layer of adhesive is mounted within a recess of the second base surface.

6. A strip according to claim 4 or 5, in which the second base surface is spaced from and not co-planar with the first-mentioned base surface.

125 7. A sealing strip made of a length of flexible material having a base surface carrying a layer of adhesive by means of which the sealing strip may be mounted and held in operative position, a

- substantially inextensible member running longitudinally along and embedded within the material of the sealing strip for substantially preventing stretching of the sealing strip, and a
- 5 sealing portion attached to and extending along the length of the base and having a profile which is bendable towards and away from the base.
8. A strip according to claim 7, in which the external surface of the layer of adhesive is
- 10 adhesively inoperative but which is capable of being rendered operative and by means of which the strip may be secured in position.
9. A strip according to claim 7 or 8, which strip defines a distal edge which is curved back on
- 15 itself so as to embrace the distal edge of a mounting flange or the like to which the sealing strip may be operatively attached.
10. A strip according to claim 9, in which the curved-back distal edge of the sealing strip is
- 20 extended so as to define, in combination with the said base surface of the sealing strip, a channel for embracing both sides of, as well as the distal edge of, the said flange.
11. A strip according to any one of claims 1 to
- 25 6 and 8, in which the layer of adhesive is rendered inoperative by being covered with a removable protective covering.
12. A strip according to claim 11, in which the adhesive is a pressure-sensitive adhesive.
- 30 13. A strip according to claim 11, in which the adhesive is mastic applied by hot melt.
14. A strip according to claim 11, in which the adhesive is cold mastic.
15. A strip according to claim 11, in which the
- 35 adhesive is double-sided adhesive tape.
16. A strip according to any one of claims 1 to 6 and 8, in which the adhesive is a solvent-activatable adhesive.
17. A sealing strip made of flexible material
- 40 and comprising a base which carries a magnetic or magnetisable layer by means of which the strip may be secured in position, and a sealing portion attached to and extending along the length of the base and having a profile which is bendable
- 45 towards and away from the base.
18. A strip according to any preceding claim, in which the flexible material is rubber.
19. A strip according to claim 18, in which the rubber of the sealing portion is softer than the
- 50 rubber of the base.
20. A sealing strip substantially as described with reference to Figure 1 of the accompanying drawings.
21. A sealing strip substantially as described
- 55 with reference to Figure 3 of the accompanying drawings.
22. A sealing strip substantially as described with reference to Figure 4 of the accompanying drawings.